FACTORS THAT DRIVE GREEN BUILDING IMPLEMENTATION AND THE COST IMPACT OF GREEN BUILDING IMPLEMENTATION

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SUPERVISOR'S DECLARATION

I hereby declare that I have checked this project and in my opinion this project is adequate in term of scope and quality for the award of the Degree In Project Management

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STUDENT DECLARATION

I hereby declare that the work in this thesis is my own except for quotations and summaries which have been duly acknowledged. The thesis has not been accepted for any degree and is not concurrently submitted for award of other degree.

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ABSTRACT

This research is discuss about the factors that drive the green building implementation and the cost impact of green building implementation. The first objective of this research are to identify the factors that drive the contractors to implement green building practices in their project at the same time to analysed the cost impact when implementing green building practice in their project. Two type of data collecting technique are used in order to collect the data on the topic. The primary data are obtained through the survey of questionnaires that have been send to the total of 112 G7 contractors registered under CIDB located in Lembah Klang. Secondary data are collected through the website, reading the journal, articles and books in library. Based on the data analysis in chapter 4, in can be conclude that most of the respondent are agree that the issues of environmental problem including air pollution, global warming and carbon dioxide emission is the main factor that drive the contractors to implement green building practice. Meanwhile, the finding also shows that the green building practice will hugely give an impact on the lifecycle cost of the building such as reduce operation cost and utility cost. As the conclusion, in order to reduce the impact of built environment on people and environment, green building concept is the most applicable approaches.

ABSTRAK

Kajian ini membincangkan tentang faktor-faktor yang mendorong pelaksanaan bangunan hijau dan kesan pelaksanaan bangunan hijau terhadap kos. Objektif pertama kajian ini adalah untuk mengenal pasti faktor-faktor yang boleh mendorong kontraktor untuk melaksanakan amalan bangunan hijau dalam projek mereka dan pada masa yang sama untuk menganalisis kesan terhadap kos apabila melaksanakan amalan bangunan hijau. Dua jenis teknik pengumpulan yang digunakan untuk mengumpul data mengenai kajian yang dilakukan. Data primer diperolehi melalui kajian soal selidik yang telah dihantar kepada sejumlah 112 kontraktor G7 yang berdaftar di bawah CIDB yang terletak di Lembah Klang. Data sekunder dikumpulkan melalui laman web, pembacaan jurnal, artikel dan buku-buku di perpustakaan. Berdasarkan data yang dianalisis dalam bab 4, kesimpulan dapat dibuat bahawa kebanyakan responden bersetuju bahawa isu-isu masalah alam sekitar termasuklah pencemaran udara dan pemanasan global adalah faktor utama yang mendorong kontraktor untuk melaksanakan amalan bangunan hijau. Sementara itu, hasil kajian juga menunjukkan bahawa amalan bangunan hijau akan memberikan kesan yang besar ke atas kos kitaran hayat bangunan seperti mengurangkan kos operasi dan kos utiliti. Kesimpulannya, dalam usaha untuk mengurangkan kesan pembangunan terhadap manusia dan alam sekitar, konsep bangunan hijau adalah pendekatan yang paling berkesan.

CHAPTER 1

INTRODUCTION

1.0 INTRODUCTION

Over the last few decades, sustainable building practice become more prominent in Malaysia. Conservation of natural resources while reducing the threat to the environment such as global warming and greenhouse gases become the main focus of sustainable development. United Nations (1987) describes that "the term of sustainable development is a group of technique to reduce poverty, create the reasonable standards of living, fulfil the basic requirement of all people, and design sustainable political practices at the same time taking the steps necessary to evade irreversible impact to the natural environment in the long-term".

Green building term is common when talked about sustainable development. Green buildings are designed to minimise and mitigate the largely effect of the built environment on both the environment itself and human health by effectively using the water, energy and other important resources. Secondly, secure occupant safety and health and improving worker efficiency and third is minimise the waste, contamination and environmental degradation through proper maintenance , better designand effective operation (Frej and Browning, 2005) .

In order to increase and encourage the use and application of sustainable development and green building practices, Malaysia government has launched a new concept in construction industry which is known as green building concept that focused on environmental friendly. Malaysia government has introduced National Green Technology Policy (NGTP) in 2009 as the sign that the government are really serious to implement green buildingconcept in this country. These include among others intensification of green technology research and innovation towards commercialization, promotion and public awareness of green technology .

Typically for construction of building, the government encourage the utilization of renewable energy (RE) and energy efficiency (EE) in buildings such as solar photovoltaic (PV), rainwater harvesting, phasing out of incandescent light, and the application of green building index .

According to Frej and Browning 2005, green building is a result of a design with better sitting, construction, maintenance, operation and removal which focuses on maximising the efficiency of resource use including the energy, water, and materials while reducing building impacts on human safety and health and the environment through the building's lifecycle. Different kind of materials and equipment will be used in the construction of green building that make their appearances also differ from other normal building that we always seen . For example, in green building they more prefer to used solar panel to save the energy and also always used recycle material in their construction since the natural resources are scarce .

1.1 PROBLEM STATEMENT

According to Horvath (1999), construction industry can be considered as one of the most important industries that cause degradation of the environment. Threat to environment and human being such as global warming and increasing of greenhouse gases are primary contributed by construction industry. Furthermore, according to the observation made by Schmidt (2000), one-third of ecological disasters are the result form building activity. Thus, it can be conclude that construction activities have direct impact on both people and environment, as it leads to the change in the state or condition of such environment in terms of not only the quality but also the stock of natural resources.

In order to overcome this problem, new practice is introduced known as green building practices that will lessen the threat to the environment and improve quality of life. Malaysia is also include as one country that show interest in green building practices. The former prime minister of Malaysia Y.A.B Tun Abdullah Ahmad Badawi, launched the Malaysian Green Building Mission in march 2007 with the objectives of increasing the level of awareness, promoting and consolidating effort in achieving sustainable development in construction industry in Malaysia .

However, our country still very much lacking behind in green building development as compared to other Asia Pacific countries such as Australia, Japan, and Singapore. Perhaps the most common issued faced by contractor, professional designer and owner is that they fail to understand that there is a huge difference between conventional construction project and green construction project . A lot of effort has been poured in order to encourage this green building practices in Malaysia and finally show a good result by the establishment and construction of few green building which have been built based on the concept of energy efficiency such as LEO (low energy office) Building of the Ministry of Energy, Water and Communications in Putrajaya and Pusat Tenaga Malaysia (PTM) .